

Commonwealth of Kentucky
Division for Air Quality
PERMIT STATEMENT OF BASIS

CONDITIONAL MAJOR DRAFT PERMIT No. F-04-038

BLUEGRASS DIARY AND FOOD, LLC

GLASGOW, KY

MAY 26, 2005

LAXMI D.CHERUKURI, REVIEWER

PLANT I.D. # 21-229-00009

APPLICATION LOG # APE20040001

AI #11649

SOURCE DESCRIPTION:

The application from Bluegrass Dairy and Food, LLC (formerly known as Armour and Company) for addition of a new spray dryer (planned for installation in November 2004) and inclusion of existing indirect heat exchangers in the permit, was received on July 23, 2004 and was called complete on October 5, 2004. This facility has a sourcewide-operating permit (O-77-126).

The facility is classified as a Conditional Major source of air pollution, based on the potential to emit more than 100 tons per year (tpy) of particulate matter of less than 10 micrometers (PM₁₀).

The following is a list of significant emission units.

COMB 1001	Spray Dryer Blaw Knox #750
COMB 2001	Spray Dryer Blaw Knox # 750
COMB 3001	Spray Dryer Blaw Knox #1500
COMB 4001	Indirect Heat Exchanger (Continental)
COMB 5001	Indirect heat Exchanger (Kewanee)

The following is a list of insignificant emission units.

EPQT 1	Pilot Dryer
EPQT 2	3 Baggage Operations
EPQT 3	6 Space Heaters

COMMENTS:

COMB 1001	Spray Dryer Blaw Knox #750, 5mmBtu/hr
COMB 2001	Spray Dryer Blaw Knox #750, 5mmBtu/hr
COMB 3001	<u>Spray Dryer Blaw Knox #1500, 7mmBtu/hr</u>

Combustion Units 01 and 02 were established in 1959 and 1972 respectively. Each unit has a maximum fuel input capacity of 5 million British thermal units per hour (mmBtu/hr). The primary fuel burned for each unit is natural gas.

Combustion Unit 03 is the proposed dryer with a maximum fuel input capacity of 7 million British thermal units per hour (mmBtu/hr). The primary fuel used is natural gas.

Both the existing dryers as well as the proposed dryer are each equipped with a cyclone and scrubber. The scrubbers are designed to capture particulate emissions that escape the cyclones. The cyclone is an integral part of the product recovery process and is not considered an air pollution device.

Bluegrass Dairy and Food dries a variety of dairy and food products. Food products are liquefied and the slurry (ranging from 30% to 60% moisture) is conveyed into a drying chamber. The product is sprayed inside the drying chamber, where it comes into contact with airflow heated by natural gas fired burners. 50 % of the product falls to the bottom of the dryer and gets conveyed to a packing operation. The air flow out of the dryer containing the remaining 50% of the product is conveyed through a series of cyclones that capture approximately 93% of the product and discharges it to the packaging area.

The scrubbers are estimated to capture 95% of the particulate matter that enters them. The proposed scrubber is designed differently than the existing scrubbers; however, all of the units basically use water mist to capture particulate matter and prevent from emission into the atmosphere.

Pursuant to 401 KAR 61:020, Section 3 (2)(b), units built before July 2, 1975 shall have particulate matter emissions ≤ 3.38 lbs/hr.

Pursuant to 401 KAR 61:020, Section 3 (1)(a), the units built before July 2, 1975 shall have visible emissions $\leq 40\%$ opacity.

For emission from a control device or stack, no person shall cause, suffer, allow or permit the emission into open air of particulate matter from any affected facility, which is in excess of the quantity specified in this administrative regulation.

COMB 4001	Indirect Heat Exchanger (Continental)
COMB 5001	<u>Indirect heat Exchanger (Kewanee)</u>

Bluegrass Dairy and Food operates two boilers for process heat, which it wishes to add to the current permit. The Kewanee boiler is rated at 12.5mmBtu/hr and the Continental boiler is rated at 10.35mmBtu/hr. Both boilers use natural gas with propane as a backup fuel source and were installed in 1962.

Pursuant to 401 KAR 61:015 Section 4(1), units with a capacity of 250 mmBtu/hr or less and built before April 9, 1972 shall have particulate matter emissions of ≤ 0.75 lbs/ mmBtu on a three hour average.

Pursuant to 401 KAR 61:015 Section 4(1), units with a capacity of 250 mmBtu/hr or less and built before April 9, 1972 shall have SO₂ emissions of ≤ 6 lbs/ mmBtu on a twenty four hour average.

Pursuant to 401 KAR 61:015 Section 4(3), the units shall have visible emission ≤40% opacity with respect to the particulate matter.

Emissions are based on the maximum heat capacity rating of the units and AP-42, Chapter 1.4 Natural Gas Fired Combustion emission factors.

Insignificant Activities

EPQT 1 Pilot Dryer

EPQT 2 Bagging Operations

EPQT 3 Space Heaters

The facility operates a small pilot dryer and six space heaters throughout the plant, which range in size from 36,000Btu/hr to 144,000 Btu/hr, the emissions of which have been determined as insignificant based on emission calculations.

For the final product, the facility operates 2 bagging processes and plans to add another one for the proposed dryers. The bagging processes are controlled inside the building and generate a minimal amount of particulate matter emissions.

EMISSION AND OPERATING CAPS DESCRIPTION:

Bluegrass Dairy and Food first applied for a state origin permit but it was noticed that the potential to emit particulate matter was substantially greater than 100 tons /yr, though their actual emissions were substantially less. To preclude the applicability of 401 KAR 52:020, source wide particulate emissions shall not exceed 90 tons/year.

CREDIBLE EVIDENCE:

This permit contains provisions, which require that specific test methods, monitoring or recordkeeping be used as a demonstration of compliance with permit limits. On February 24, 1997, the U.S. EPA promulgated revisions to the following federal regulations: 40 CFR Part 51, Sec. 51.212; 40 CFR Part 52, Sec. 52.12; 40 CFR Part 52, Sec. 52.30; 40 CFR Part 60, Sec. 60.11 and 40 CFR Part 61, Sec. 61.12, that allow the use of credible evidence to establish compliance with applicable requirements. At the issuance of this permit, Kentucky has not incorporated these provisions in its air quality regulations.